

176_61623_Sequence_List_ST25.txt
SEQUENCE LISTING

<110> Maines, Mahin D.
<120> METHODS OF MODULATING CELL CYCLE AND CELL SIGNALING PATHWAYS
USING BILIVERDIN REDUCTASE
<130> 176/61623 (1208)
<140> 10/584,886
<141> 2006-08-28
<150> PCT/US2004/031866
<151> 2004-09-29
<150> 60/539,006
<151> 2004-01-23
<150> 60/506,805
<151> 2003-09-29
<160> 18
<170> PatentIn version 3.5
<210> 1
<211> 296
<212> PRT
<213> Homo sapiens
<400> 1

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Gly Arg Ala Gly Ser Val Arg Met Arg Asp Leu Arg Asn Pro His Pro
20 25 30

Ser Ser Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu
35 40 45

Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser
50 55 60

Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His
65 70 75 80

Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val
85 90 95

Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu
100 105 110

Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu
115 120 125

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Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp
130 135 140

Leu Leu Lys Gly Ser Leu Leu Phe Thr Ser Asp Pro Leu Glu Glu Asp
145 150 155 160

Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu
165 170 175

Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu
180 185 190

Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu
195 200 205

Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys
210 215 220

Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn
225 230 235 240

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala
260 265 270

Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile
275 280 285

Gln Lys Tyr Cys Cys Ser Arg Lys
290 295

<210> 2
<211> 1070
<212> DNA
<213> Homo sapiens

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tccgtgcgga tgagggactt gcggaatcca cacccttcct cagcgcttcct gaacctgatt 180
ggcttcgtgt cgagaaggga gtcggggagc attgatggag tccagcagat ttctttggag 240
gatgctcttt ccagccaaga ggtggaggtc gcctatatct gcagtgagag ctccagccat 300
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<210> 3
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<212> PRT
<213> Homo sapiens

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<400> 3

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Met Asn Thr Glu Pro Glu Arg Lys Phe Gly Val Val Val Val Gly Val
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Gly Arg Ala Gly Ser Val Arg Met Arg Asp Leu Arg Asn Pro His Pro
          20          25          30

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Ser Ser Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu
          35          40          45

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Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser
          50          55          60

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Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His
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Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val
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Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu
          100          105          110

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Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu
          115          120          125

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Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp
130 135 140

Leu Leu Lys Gly Ser Leu Leu Phe Thr Ala Gly Pro Leu Glu Glu Glu
145 150 155 160

Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu
165 170 175

Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu
180 185 190

Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu
195 200 205

Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys
210 215 220

Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn
225 230 235 240

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala
260 265 270

Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile
275 280 285

Gln Lys Tyr Cys Cys Ser Arg Lys
290 295

<210> 4
<211> 295
<212> PRT
<213> Rattus norvegicus

<400> 4

Met Asp Ala Glu Pro Lys Arg Lys Phe Gly Val Val Val Val Gly Val
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Ala Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu Gly
35 40 45

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Ser Leu Asp Glu Val Arg Gln Ile Ser Leu Glu Asp Ala Leu Arg Ser
50 55 60

Gln Glu Ile Asp Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His Glu
65 70 75 80

Asp Tyr Ile Arg Gln Phe Leu Gln Ala Gly Lys His Val Leu Val Glu
85 90 95

Tyr Pro Met Thr Leu Ser Phe Ala Ala Ala Gln Glu Leu Trp Glu Leu
100 105 110

Ala Ala Gln Lys Gly Arg Val Leu His Glu Glu His Val Glu Leu Leu
115 120 125

Met Glu Glu Phe Glu Phe Leu Arg Arg Glu Val Leu Gly Lys Glu Leu
130 135 140

Leu Lys Gly Ser Leu Arg Phe Thr Ala Ser Pro Leu Glu Glu Glu Arg
145 150 155 160

Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu Val
165 170 175

Ser Leu Phe Gly Glu Leu Ser Leu Ile Ser Ala Thr Leu Glu Glu Arg
180 185 190

Lys Glu Asp Gln Tyr Met Lys Met Thr Val Gln Leu Glu Thr Gln Asn
195 200 205

Lys Gly Leu Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys Arg
210 215 220

Asn Arg Tyr Val Asn Phe Gln Phe Thr Ser Gly Ser Leu Glu Glu Val
225 230 235 240

Pro Ser Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asp Ile
245 250 255

Phe Val Gln Lys Leu Leu Asp Gln Val Ser Ala Glu Asp Leu Ala Ala
260 265 270

Glu Lys Lys Arg Ile Met His Cys Leu Gly Leu Ala Ser Asp Ile Gln
275 280 285

Lys Leu Cys His Gln Lys Lys
290 295

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<210> 5
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 <212> DNA
 <213> Rattus norvegicus

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 gaaatttgga gtggtagtgg ttggtgttgg cagagctggc tcggtgaggc tgagggactt 180
 gaaggatcca cgctctgcag cattcctgaa cctgattgga ttgtgtcca gacgagagct 240
 tgggagcctt gatgaagtac ggcagatttc ttggaagat gctctccgaa gccaaagat 300
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 ccagaagctt tgccaccaga agaagtgaag aggaagcttc agagacttct gaagggggcc 1020
 agggtttggc cctatcaacc attcaccttt agctcttaca attaaacatg tcagataaac 1080
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<210> 6
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 <212> PRT
 <213> Mus musculus

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 20 25 30

Ser Ala Phe Leu Asn Leu Ile Gly Tyr Val Ser Arg Arg Glu Leu Gly
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35

Ser Leu Asp Asn Val Arg Gln Ile Ser Leu Glu Asp Ala Leu Arg Ser
50 55 60

Gln Glu Val Asp Val Ala Tyr Ile Cys Thr Glu Ser Ser Ser His Glu
65 70 75 80

Asp Tyr Ile Arg Gln Phe Leu Gln Ala Gly Lys His Val Leu Val Glu
85 90 95

Tyr Pro Met Ala Leu Ser Phe Ala Ala Ala Gln Glu Leu Trp Glu Leu
100 105 110

Ala Ala Gln Lys Gly Arg Val Leu His Glu Glu His Ile Glu Leu Leu
115 120 125

Met Glu Glu Phe Glu Phe Leu Lys Arg Glu Val Ala Gly Lys Glu Leu
130 135 140

Leu Lys Gly Ser Leu Arg Phe Thr Ala Ser Pro Leu Glu Glu Glu Lys
145 150 155 160

Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu Val
165 170 175

Ser Leu Phe Gly Glu Leu Ser Leu Ile Ser Ala Thr Met Glu Asn Arg
180 185 190

Lys Glu Asp Gln Tyr Met Lys Met Thr Val Gln Leu Glu Thr Gln Asn
195 200 205

Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys Arg
210 215 220

Asn Arg His Ile Ser Ile His Phe Lys Ser Gly Ser Leu Glu Glu Val
225 230 235 240

Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asp Ile
245 250 255

Phe Ile Gln Lys Leu Leu Gly Gln Val Ser Ala Glu Asp Leu Ala Ala
260 265 270

Glu Lys Lys Arg Ile Leu His Cys Leu Glu Leu Ala Ser Asp Ile Gln
275 280 285

176_61623_Sequence_List_ST25.txt

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290 295

<210> 7
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35 40 45

Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser
50 55 60

Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His
65 70 75 80

Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val
85 90 95

Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu
100 105 110

Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu
115 120 125

Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp
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Leu Leu Lys Gly Ser Leu Leu Phe Thr Ala Gly Pro Leu Glu Glu Glu
145 150 155 160

Arg Phe Gly Ser Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu
165 170 175

Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu
180 185 190

Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu
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176_61623_Sequence_List_ST25.txt

Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys
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Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn
225 230 235 240

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala
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Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile
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Gln Lys Tyr Cys Cys Ser Arg Lys
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<212> RNA
<213> Artificial

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gtttggcg 68

<210> 11

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 <220>
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 <223> Oligonucleotide 1x CRE

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 <210> 14
 <211> 60
 <212> DNA
 <213> Artificial

 <220>
 <223> Oligonucleotide 4x CRE

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 <210> 15
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 <212> DNA
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<220>
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